S/154/60/000/006/002/006
B116/B201

AUTHOR: Danilenko, T. S., Candidate of Technical Sciences

TITLE: Principle of the construction of a geodetic network on the area of a large hydraulic power station

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Geodeziya i aerofotos"yemka, no. 6, 1960, 33-44

TEXT: The author offers a survey of experience gained in the setup of geodetic networks during the construction of large hydraulic power stations, and draws his conclusions on that basis. A survey is first given here of experience gained in the construction of the Dneproges imeni V. I. Lenin. When this hydraulic power station was started in 1928, the development of the ranging network was passed over to the Glavnyy Geodezicheskiy Komitet (nyne Glavnoye upravleniye geodezii i kartografii) (Main Geodetic Committee) (now, Main Administration of Geodesy and Cartography). The determination of the directions of the longitudinal axes of the pillar was simplified by including the determination of the position of the gemetrical center of the dam into the triangulation net

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Principle of the construction ...

(Fig 1). It was later found that the geometrical center did not entirely satisfy requirements. It could not be reached during the high tide nor during the ice drift, and the tower was swept away in 1931. A critical study of the ranging network in this hydraulic power station shows the possibility of using a simpler scheme and of carrying out the surveying operations with somewhat less accurately, without impairing the accuracy of the final results. It was found from calculations and the conditions of the terrain that it would be of greater advantage to adopt the diameter AB (Fig. 1) of the dam as the basis for intersection, and to draw it in parallel to the chord of the dam arch (length of 1.2 km). This is proved here on the strength of Fig. 2 and by using the formulas of Professor A. S. Chebotarev (Ref. 2)

rinciple of the construction ...

$$m_x^2 = \frac{m^2 (l_1^2 \cos^2 \alpha_2 + l_2^2 \cos^2 \alpha_1)}{\rho^2 \sin^2 (\alpha_2 - \alpha_1)} \quad (1)$$

$$m_y^2 = \frac{m^2 (l_1^2 \sin^2 \alpha_2 + l_2^2 \sin^2 \alpha_1)}{\rho^2 \sin^2 (\alpha_2 - \alpha_1)} \quad (2)$$

$$M^2 = m_x^2 + m_y^2 = \frac{m^2 (l_1^2 + l_2^2)}{\rho^2 \sin^2 \gamma} \quad (3)$$

m_x and m_y are the displacements of the point to be determined on the x- and y-axis, respectively. m is the root mean square error of the angles β_1 and β_2, respectively. is equal to 2".69". When shifting the origin of coordinates to the center of AB and taking as the positive direction of the coordinate axis the one to the right by moving it coincide with the base, then $\alpha_1 = 90^\circ - \gamma$, and α_2 = [illegible]. There

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rinciple of the construction ...

values are introduced into three formulas, the displacements are determined from the new formulas obtained (where it is assumed that m = ± 1" and ≅ 200000"), and, for comparison, these values are compared with those obtained from Fig. 1 (in the construction of the Dneproges) (Table 1). The comparison shows the advantage of the new variant. 16 years later, in the reconstruction of the hydraulic power station, the author recommended, and also supervised, the construction of the local geodetic net. Experience shows the impossibility of obtaining the main net in its original form throughout the entire time of construction of the hydraulic power station. This was found, e.g., at the Tsimlyanskiy gidrouzel (Tsimlyanskiy hydraulic power station), Kuybyshevskiy gidrouzel (Kuybyshev hydraulic power station), Bratskaya GES (Bratsk hydraulic power station). For an improvement of the surveying operations in detailed staking in concrete hydraulic structures, the author developed local geodetic nets in the construction of the Gor'kovskiy gidrouzel (Gor'kiy hydraulic power station) and Stalingradskiy gidrouzel (Stalingrad hydraulic power station), as he had done in the reconstruction of the Dneproges. Summing up: Geodetic operations are necessary in all three stages in the construction of hydraulic power stations: projecting and

Principle of the construction ...

prospecting, construction and operation of the power station. The most complicated operations are involved in construction. The continuously changing situation during the construction is one of the decisive factors in surveying work. All topographic and geodetic operations must be connected with the various surveying operations that are required for ensuring construction and assembly. The high-accuracy ranging network of the Dneproges was not sufficiently correlated to the accuracy of final results in the detailed ranging of the dam. A premature development of the high-accuracy geodetic net in other hydraulic power stations likewise has no logical justification, inasmuch as many of the points are lost until the time it can be used. It is therefore suitable to set up the geodetic net on the building site in the following succession: During prospecting, the geodetic net is to be constructed with an accuracy to satisfy the demands made on the scale 1: 500 (triangulations of 2nd and 3rd order). Once the final choice of alignments of water pipes of the power station has been made, the points of the main net near the projected main structures must be condensed On the area where hydraulic concrete structures are erected, local ranging nets in the form of rectangular figures must be developed before the

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basins are cleared (Fig. 3). During construction, the position of the ranging points must be determined on the previously built parts of the structure. Before the basins are prepared for flooding, these points must be transferred to the principal and auxiliary alignments on the lateral structure surfaces. At the time when the basins are prepared for flooding, a special net must be constructed, or permanent alignments must be determined for the observation of horizontal dislocations of the structures. In the construction of settlements of urban character, polygonal networks are particularly suited. In the construction of industrial plants it is suitable to construct the ranging networks in the form of a net of squares (with a side length of 100-200 m). In the construction of large earth dams, supply channels etc., it will be necessary to establish polygonal traverses connected with trigonometrical points. There are 3 figures and 5 Soviet-bloc references.

SUBMITTED: April 14, 1960

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Principle of the construction ...

Legend to Table 1: 1) scheme, 2) Dneprostroy, 3) possible variant, 4) no. of points, 5) angles in degrees, 6) in mm.

Таблица 1

1) Схема	4) №№ точек	5) Углы в градусах			m_{x_1}	m_{y_1}	M_1
		φ_1	φ_2	γ	в мм 6)	в мм 6)	в мм 6)
2) Днепростроевская	1	25°	18°	137°	3,1	6,8	7,5
	2	42	48	90	5,3	4,6	7,2
	3	38	70	72	7,0	4,8	8,5
3) Возможный вариант	1	64°	26°	90°	5,0	3,3	6,0
	2	43	47	90	4,2	4,2	6,0
	3	27	63	90	4,9	3,5	6,1

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S/154/60/000/006/002/006
B116/B201

Principle of the construction ...

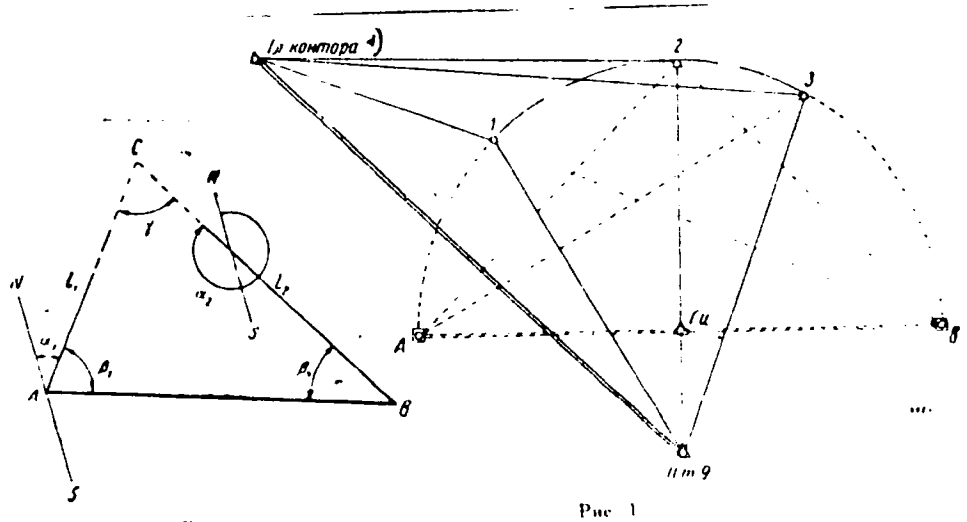

Рис. 2

Рис. 1

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S/154/60/000/006/002/006
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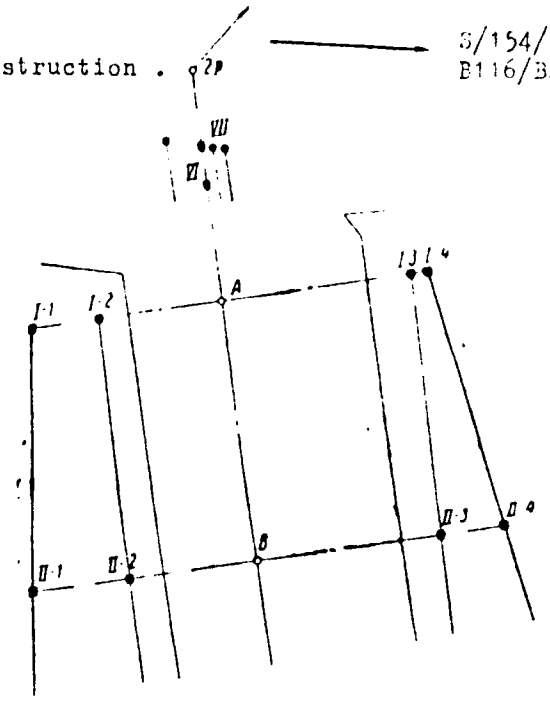
Principle of the construction .



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S/154/60/000/006/002/006
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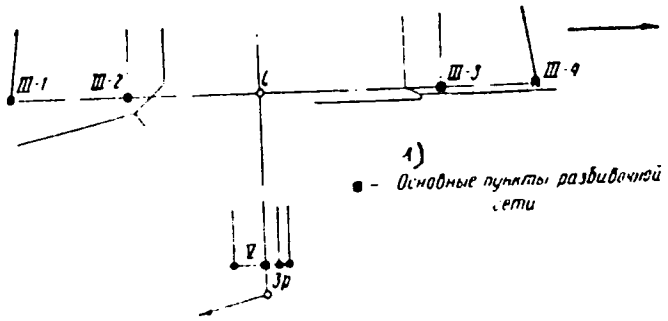
Principle of the construction ...

Legend to Fig. 3:
A, B, C are points of intersection of transverse and longitudinal axes of structure, 3p, 3p are angles of rotation of alignment axis.
1) principal points of ranging network.



Card 10/10

DANILENKO, T.S., kand.tekhn.nauk

Survey lay-out operations in the construction of the Stalingrad hydroelectric development. Energ. stroi. no.3: 84-87 (13), 1960. (MIRA 14:9)

1. Stalingradgidrostroy.
(Stalingrad hydroelectric power station--Surveying)

DANILENKO, T.S.

Work practices used in geodetic layout operations. Geod. i kart. no.10:61-67 O '61. (MIRA 14:11)
(Building sites--Surveying)

S/035/62/000/008/061/090
A001/A101

AUTHOR: Danilenko, T. S.

TITLE: Geodetic group of a construction

PERIODICAL: Referativnyy zhurnal, Astronomiya i Geodeziya, no. 8, 1962, 12, abstract 8G112, (In collection: "Energ. str-vo", Moscow-Leningrad, 1961, 244 - 268)

TEXT: The author describes organization and activities of the geodetic service in the construction of the Volgograd hydroelectric power plant. The "Geodetic department" was established at the construction in 1956, and an instruction was worked out on geodetic service. In order not to delay construction works, the "Geodetic department" renounced development of a construction triangulation, common for all the objects, and developed independent local networks for each of them. Layout technique was radically improved by establishing a dense network of mutually-perpendicular ranges, fixed on the site. Preparation of layout drawings became superfluous, and geodesists of the sections were able to carry out layout work directly on the basis of the installation drawings. Range and coordinate points were fixed by wall signs on the side surfaces of constructions. The method

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S/015/62/000/008/061/090
A001/A101

Geodetic group of a construction

of side leveling was widely in use; it was based on using a theodolite for readings on horizontally suspended rods. In particular, this method was used to check vertical structures of recesses in water gates, gratings and grab holding devices. This made it possible to dispense with testing the space position of recess structures by sinking and lifting shields or models. Suspended leveling rods were used in checking geometrical positions of structures in difficultly accessible construction places, e.g. in examining the profiles of the concrete surface of the dam spillway face.

V. Pavlov

[Abstracter's note: Complete translation]

Card 2/2

S/035/62/000/010/094/128
A001/A101

AUTHOR: Danilenko, T. S.

TITLE: From an experience of detailed layout on the basis of wall signs on objects being constructed

PERIODICAL: Referativnyy zhurnal, Astronomiya i Geodeziya, no. 10, 1962, 18, abstract 10G98 ("Gidrotekhn. stroyt.", 1962, no. 5, 44 - 47)

TEXT: Under complicated construction conditions, wall signs can be used for detailed layout work; a theodolite is placed in line of these signs. Accuracy is considered of placing the theodolite in line by measuring the angle close to 180° between these signs. In this case deviation of the theodolite from the line can be calculated by the formula:

$$e_c = \frac{\varepsilon}{\rho''} \frac{k}{k+1},$$

where ε is deviation from angle 180° measured between the wall signs; $S_1 > S_2$ are respectively larger and smaller distances from the theodolite to these

Card 1/2

signs; [illegible]. In setting the theodolite in the extension of the line determined by the two signs, the magnitude of limiting deviation from the line will be equal to:

$$e_n = [illegible]_{cr} \frac{[illegible]}{[illegible]} \cdot \frac{[illegible]}{K-1}$$

where [illegible] 60"/v is critical sighting angle, v is magnification of the instrument. The author investigates the effect on angle measuring accuracy of collimation error and inclination of the instrument rotation [illegible]. Tables and graphs of magnitudes [illegible] and [illegible] are presented for various [illegible], as well as the graphs of [illegible] errors [illegible] inclination of instrument rotation axis as functions of vertical angle values. In [illegible] the case is considered of setting the theodolite in line on the basis of one end sign; this is done by forming a right angle with the sign located on the axis perpendicular to the line.

G. Levchuk

[Abstracter's note: Complete translation]

Card [illegible]

DANILENKO, T.S., kand.tekhn.nauk

Detailed layouts from wall marks on the sturctures being built.
Gidr. stroi. 32 no.2:44-47 F '62. (MIRA 15:7)
(Hydraulic structures) (Theodolites)

DANILENKO, T.S., kand.tekhn.nauk

Geodetic services for construction of an industrial complex.
Prom.stroi. 40 no.11:49-53 '62. (MIRA 15:12)
(Building sites) (Industrial plants)

DANILENKO, T.S., kand.tekhn.nauk

It is necessary to revise the instructions on the inspection of settling foundations. Prom.stroi. 41 no.9:43-46 S '63.
(MIRA 16:11)

DANILENKO, T.S., kand.tekhn.nauk

Conducting geodetic work in the installation of units of the Stalingrad Hydroelectric Power Station. Energ. stroi. no.16:55-58 '60. (MIRA 16:12)

1. Stroitel'noye upravleniye Stalingradskoy gidroelektrostantsii.

DANILENKO, T.S.

Connection to geodetic [illegible]
i kart. no.3:30-33 Mr '[illegible]

DANILENKO, T.S., kand. tekhn. nauk

Transferring layout axes in the construction of multistory buildings.
Prom. stroi. 41 no.6:41-44 Je '64. (MIRA 17:9)

DANIL'ENKO, U.A.; EPSHTEYN, M.M.

Effect of phytocides of garlic and mustard oils on alkaline phosphatase and invertase. Ukrain. Biokhim.Zhur. 25, No.1, 106-9 '53. (MLRA 6:5)
(CA 47 no.22:12439 '53)

1. Med. Inst., Kiev.

USSR / Forestry. Forest Crops. K-5

Abs Jour: Ref Zhur-Biol., No 16, 1958, 72630.

Author : Klopov, A.; Danilenko, V.
Inst : Not given.
Title : Shelterbelt Planting in Stavropol'.

Orig Pub: Kolkhoznoye proiz-vo, 1958, No 1, 27-29.

Abstract: The value of shelterbelt planting is determined as a means of controlling the severe climatic conditions in Stavropol' and the development of activities for the creation of shelterbelt plantations is described from 1934-1935 up to the present time. The influence on the harvest of agricultural crops of belts of various construction distributed according to different schemes is briefly described.

Card 1/1

DANILENKO, V.

Work mechanization and increased labor productivity at the Kursavka Grain Procurement Station. Muk.-elev.prom. 26 no.2:17 F '60. (MIRA 13:6)

1. Direktor Kursavskogo khlebopriyemnogo punkta Stavropol'skogo kraya.
(Kursavka--Grain elevators)

DANILENKO, V.

Our "pro's" and "con's...." Okhr. truda i sots. strakh. 4 no.3:34-35 Mr '61. (MIRA 14:3)

1. Zaveduyushchiy yuridicheskoy konsul'tatsiyey Orenburgskogo oblsovporfa.
(Pensions)

DANILENKO, V.

First in the Far East. Grazhd. av. 17 no.8:34 Ag '60. (MIRA 13:9)
(Soviet Far East--Airlines)

DANILENKO, N. (Khabarovsk).

Pilots saved the fishermen. Grazhd.av.13 no.11:14 N '56. (MLRA 10:2)
(Helicopters)

84-11-14/36

AUTHOR: Danilenko, V. (Khabarovsk)

TITLE: Power of Visual Propaganda Aids (Sila naglyadnoy agitatsii)

PERIODICAL: Grazhdanskaya aviatsiya, 1957, Nr 11, p. 12 (USSR)

ABSTRACT: The author, apparently a political party official, recommends a wider use of visual aids, mainly placards, boards, or posters, planted conspicuously at entrance doors of factories or other suitable places, urging economy, better productivity, fulfillment of quotas, and the like. Also exhibit stands with some special feature, serving a certain propaganda or educational purpose, are recommended.

AVAILABLE: Library of Congress

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DANILENKO, V.

Help came from the sky. Grazhd. av. 14 no.3:11 Mr '57.
(Helicopters) (MLRA 10:6)

84-58-6-36/59

AUTHOR: Danilenko, V.

TITLE: For Helicopters (Dlya vertoletov)

PERIODICAL: Grazhdanskaya aviatsiya, 1958, Nr 6, p 32 (USSR)

ABSTRACT: The short note reports on the work of the helicopters detailed to the Far Eastern Territorial Administration two years ago, and on the training of their pilots and specialists, the first group of whom graduated in April, 1958.

1. Helicopters--USSR 2. Pilots--Training

Card 1/1

DANILENKO, V. (Khabarovsk)

Animated work. Grazhd. av. 18 no.6:13 Je '61.
(MIRA 14:7)

1. Vneshtatnyy korrespondent zhurnala "Grazhdanskaya aviatsiya".
(Khabarovsk—Aeronautics—Study and teaching)

DANILENKO, V. (g.Khabarovsk); TSIOMA, G.; ZALUTSKIY, G.; BAKLANOV, S., starshiy instruktor-letchik; KUZ'MIN N.; KORENYAKO, A.

Facts, events, people. Kryl.rod. 12 no.8:14-15 Ag '61. (MIRA 14:8)

1. Nachal'nik aerokluba, g. Sverdlovsk (for TSioma). 2. Sartovskiy obkoma Dobrovol'nogo obshchestva sodeystviya armii, aviatsii i flotu (for Baklanov). 3. Zamestitel' predsedatelya respublikanskogo komiteta Dobrovol'nogo obshchestva sodeystviya armii, aviatsii i flotu, g. Minsk (for Korenyako).
(Aeronautics)

DANILENKO, V. [Danylenko, V.], kand.fiz.-matem.nauk

Universe expands! Znan. ta pratsia no.1:9 Ja '62. (MIRA 15:1)
(Cosmology)

DANILENKO, V. [Danylenko, V.], kand. fiz.-matem. nauk

Is the "iron" age over? Znan. ta pratsia no.6:9-10 Je '62.
(MIRA 16:7)

(Metals—Hardening)

DANILENKO, V., inzh.; PEREVERTEN', V.

Use of corrections in the determination of a ship's draft.
Mor. flot 22 no.8:20-21 Ag '62. (MIRA 15:7)

1. Transportno-ekspeditsionnaya kontora porta Nakhodka (for Danilenko). 2. Nachal'nik transportno-ekspeditsionnoy kontory porta Nakhodka (for Pereverten').
(Load line)

DANILENKO, V.[Danylenko, V.]; LIBINA, M.

A little about everything. Znan. ta pratsia no.10:30 O '62.
(MIRA 15:10)

(Science news) (Technological innovations)

DANILENKO, V. (Khabarovsk)

First air route. Kryl. rod. 14 no.10:32-33 O '63.
(MIRA 16:11)

DANILENKO, V.

Road to the sky. Grazhd. av. 22 no.5:15 My '65. (MIRA 18:7)

DANILENKO, V.

Leafing the flight record book. Grazhd. av. 22 no. 11:4-5
N '65. (MIRA 18:12)

L 21302-66 EWP(e)/EWT(m)/EWA(d)/EWP(t) IJP(c) JD

ACC NR: AP6007292 SOURCE CODE: UR/0226/66/000/002/0092/0096

AUTHOR: Danilenko, V. A.; Zyrin, A. V.

ORG: Institute of Problems of Metal Science AN UkrSSR (Institut problem materialovedeniya AN UkrSSR)

TITLE: Study of the properties of sintered ferromagnetic materials by the eddy current method

SOURCE: Poroshkovaya metallurgiya, no. 2, 1966, 92-96

TOPIC TAGS: ferromagnetic material, sintering, eddy current, magnetic permeability, resonance voltage, specific consuctivity, copper compound

ABSTRACT: The authors studied the possibility of applying the eddy current method to the investigation of the surface layers of conducting ferromagnetic materials. A theoretical dependence of the resonance voltage on the specific conductivity and magnetic permeability of the material is obtained. The regularity obtained was verified on sintered samples of two compositions: Cu-Mo and Fe-Cu-Mo. The experimental data agree qualitatively with the theoretical calculations. Orig. art. has: 4 figures and 10 formulas. [Author's abstract.]

SUB CODE: 11/ SUBM DATE: 060ct65/ ORIG REF: 006/

Card 1/1

DANILENKO, V. I.

The effect of the functional state of the brain cortex on the adsorbtion-phagocytic activity of the reticulo-endothelial system and the stability of the colloids of the blood in schizophrenia. V. I. Danilenko. *Zhur. Nevropatol. i Psikhiatrii im. Korsakova* 54, 752-8(1954).—A lowering of the trypan-blue index results from a weakening in the defense function of the reticulo-endothelial system. The effects of Br (I) caffeine, (II) barbamil (III), chloral hydrate (IV) and of electric current stimulation on the nervous system and in particular on the brain cortex were studied on 7 rabbits. The normal trypan-blue index in the expti., rabbits was 0.1-0.9. One % I (0.5-25 ml.) was administered subcutaneously or 10-15 ml. of 20% I rectally; 0.35-1.5 ml. of 20% II was administered subcutaneously. Sleep was induced with 2 rectal administrations per day of 30 ml. of 1% IV, or by intramuscular injection of 3 ml. of 30% III. It was established that the effect of I, II, III, IV, and of electric stimulation is reflected upon the reactivity of the reticuloendothelial system as judged by the trypan-blue index. Changes in the stability of the colloid of the blood were detd. by a method based on serum coagulation: 5 ml. of blood taken from the heart of the rabbit was allowed to become well coagulated and the serum diluted 1:5. A 0.0007% soln. of $Al_2(SO_4)_3$ was used as the coagulant. To 1 ml. of the dild. serum, 1 ml. of the coagulant was added and the course of the coagulation reaction recorded with the aid of an electrophotonephelometer. It was established that under the influence of I, II, III, IV or electric stimulation, the stability of the blood colloids and the activity of the reticulo-endothelial system run a parallel course of changes. It was thereby established that under expti. conditions with rabbits changes in the dynamics of the brain processes are accompanied by changes in the reticulo-endothelial system, specifically in its adsorbtion-phagocytic function and in the stability of the blood colloids. Two

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Danilenko, V.I.

groups of patients were then tested—group I 16-25 and group II 25-40 years of age. The trypan-blue index in schizophrenia was low, especially in the younger group in which the values were 3.3-10.5 with an av. of 7.7; in the older groups they were 10.0-16.8 with an av. of 12.7. In detg. the blood colloid stability of the patients a 1:10 diln. of the serum and 0.0003% $Al_2(SO_4)_3$ were used. The coagulation curves of patients of both groups markedly deviated from the so-called characteristic normal curves of coagulation, the deviation was greater in the younger group. It was also observed that as the psychic condition of the patients improved all the indices studied tended to return to normal. B. S. Levine 2/2

1. Kafedra psikhiatrii Dagestanskogo meditsinskogo inst.
(schizophrenia physiology, cerebral cortex regulation of RE system + Blood colloids) (Cerebral cortex) (Reticulo-Endothelial system) (Blood (Colloids)

(Reference only file) JPS

GELLER, N.M., kand.tekhn.nauk; DANILENKO, V.K., inzh.

Over-all mechanization of unloading thin-sheet metals at the freight yard. Mekh.i avtom.proizv. 14 no.1:37-38 Ja '60. (MIRA 13:5)

(Kharkov--Railroads--Freight)

GELLER, N.M., kand.tekhn.nauk; DANILENKO, V.K., inzh.

Mechanizing operations in the storage yards for bulk cargoes. Mekh. i avtom.proizv. 14 no.11:27-29 N '60. (MIRA13:11)
(Materials handling)

GELLER, N.M., kand.tekhn.nauk; DANILENKO, V.K., inzh.

Over-all mechanization of a lumber yard on a freight station. Mekh.i avtom.proizv. 16 no.5:7-8 '62. (MIRA 16:5)

(Lumber--Transportation)

DANILENKO, V.M.; TIKHONOV, L.V.

Crystal lattice defects and the scattering of X rays. Sbor. nauch. rab. Inst. metallofiz. AN URSR no.15:3-79 '62. (MIRA 15:12)
(Crystal lattices—Defects) (X rays—Scattering)

1. A. K. BUTYLENKO, V. M. DANILENKO, YU V. MIL'MAN, YU V. NAYDICH, S. A. RYBAK, A.A. SMIRNOV
2. USSR (600)

4. Alloys

7. Electrical resistance of well-organized alloys. Zhur. eksp. i teor. fiz. 23 no. 6. 1952

9. Monthly List of Russian Accessions, Library of Congress, April 1953, Uncl.

DA[illegible], V. [illegible], [illegible], YU. V., [illegible], YU. [illegible], [illegible] [illegible]OV, A. [illegible], A[illegible]TENKO, [illegible]. K.

Theory of [illegible]lectric Resistance of Alloys in Pro[illegible]

Izv. Kiyevsk. politekhn. in-ta, 1[illegible], 19[illegible], [illegible] 1 - [illegible]

[illegible]xperimental curves, expressing [illegible] r[illegible]tio of el[illegible]tric [illegible] [illegible]lloys in progressing order to compound and dist[illegible]t order, [illegible] theoretical ones by presence of rectilinear sections, shar[illegible] [illegible]ximums [illegible] uneven variations. These peculiarities are theoretically explained in examples of alloys with cubic l[illegible]ttices. The article confirms [illegible]. [illegible]. [illegible]mirnov's theory Zhur [illegible] i Theor Fiz 1[illegible], [illegible]3 (19[illegible]) of peculiarities o[illegible] [illegible] alloys i[illegible] [illegible] order. (R[illegible]Fiz, No [illegible], 19[illegible])

[illegible] [illegible]ur. No. [illegible], [illegible]

[illegible]-1957-12-24864 D

Translation from: Referativnyy zhurnal, Metallurgiya, [illegible] Nr 12, p 273 (USSR)

AUTHOR: Danilenko, V. M.

TITLE: On the Theory of the Scattering of Slow Neutrons in Alloys (K teorii rasseyaniya medlennykh neytronov v splavakh)

ABSTRACT: Bibliographic entry on the Author's dissertation for the degree of Candidate of Physical-Mathematical Sciences, presented to the In-t metallofiz. AN SSSR (Institute of the Physics of Metals of the USSR Academy of Sciences), Kiyev, 1957

ASSOCIATION: In-t metallofiz. AN SSSR (Institute of the Physics of Metals of the USSR Academy of Sciences)

1. Slow neutrons-Scattering-Bibliography 1. Neutrons-Scattering-Bibliography

Card 1/1

AUTHOR: Danilenko, V.M., Krivoglaz, M.A., Matysina, Z.A. and Smirnov, A.A. 104

TITLE: On the theory of scattering of the waves of the crystal lattice of solid solutions. (K teorii rasseyaniya voln kristallicheskoy reshetkoy tverdykh rastvorov.)

PERIODICAL: "Fizika Metallov i Metallovedenie" (Physics of Metals and Metallurgy), 1957, Vol.IV, No.1 (10), pp.28 - 35, (U.S.S.R.)

ABSTRACT: Formulae are derived for the probability of scattering of various types of waves caused by the non-ordered alternation of atoms of various types on the nodes of the crystal lattice for the general case of a multi-component system with any number of components, taking into consideration the distant order and the correlations in all the coordination spheres. In the assumed general case, the solid solution crystal will have in the non-ordered state any type of Bravais lattice, any state and any distant order; in substituting the nodes of the crystal lattice by atoms of various types correlation is taken into consideration in all the coordination spheres. In considering the starting formulae for the probability of scattering, the authors reduce the various known formulae of the probability of scattering of X-rays, of slow neutrons and of electrons to a single unified equation:

$$w = C (J + w')$$

On the theory of scattering of the waves by the crystal lattice of solid solutions. (Cont.) 104

where w is the probability of scattering per unit of time and per unit of solid angle; C is the coefficient of proportionality which is independent of the composition and the character of distribution of the atoms and can be determined by taking into consideration eqs. (4), (7) and (8), pp. 29-30; S is expressed by eq. (11), and some components of this equation are expressed for the case of X-rays, neutrons and electrons by eq. (12) and two other equations on P.31. In the second part of the paper, the formulae for the probability of scattering are derived. 14 references, 6 of which are Russian.

Institute of Metal Physics, Ac.Sc., Ukraine. Recd. April 2, 1956.

DANILENKO, V.M.; KRIVOGLAZ, M.A.; MATYSINA, Z.A.; SMIRNOV, A.A.

Theory of slow neutron scattering in alloys. Issl. po zharopr. splav. 3:150-160 '58. (MIRA 11:11)
(Neutrons--Scattering) (Alloys)

DANILENKO, V.M. [Danylenko, V.M.]; MATYSINA, Z.A.

Theory of nuclear scattering of slow neutrons in alloys [with summary in English]. Ukr. fiz. zhur. 3 no.6:743-750 N-D '58. (MIRA 12:6)

1. Institut metalofiziki AN USSR.
(Neutrons--Scattering) (Alloys)

PHASE I BOOK EXPLOITATION SOV/4177

Akademiya nauk Ukrainskoy SSR. Institut metallofiziki

Voprosy fiziki metallov i metallovedeniya (Problems in the Physics of Metals and Metallography) Kiyev, Izd-vo AN USSR, 1959. 215 p. (Series: Its: Sbornik nauchnykh rabot, no. 10) 3,000 copies printed.

Ed. of Publishing House: O.M. Pechkovskaya, Tech. Ed.: R.A. Buniy; Editorial Board: V.N. Svechnikov, Academician, Academy of Sciences UkrSSR (Resp. Ed.), S.D. Gertsriken, Doctor of Physics and Mathematics, and I.Ya. Dekhtyar, Doctor of Technical Sciences.

PURPOSE: This collection of articles is intended for scientific workers, aspirants and engineers working in metal physics, metallography and metallurgy, and for students in advanced courses of metallurgy and physics departments.

COVERAGE: The collection of articles gives the results of an investigation of the effect of high heating rates, thermal treatment, deformation and crystallization conditions on the phase transformations, structure and properties of metals and alloys, and of the effect of alloying additives on volume and intergranular

Problems in the Physics of Metals and Metallography SOV/4177

diffusion in alloys, as well as the effect of repeated tempering by ultrasound irradiation on the physical properties of alloys. There is also a description of an x-ray camera for studying the structure of the individual grains. The following personalities are mentioned: V. Kazaha, A.A. Smirnov, S.G. Glazunov, Ye.I. Morozov, V. Danilenko, L.M. Likhot', and I. Ya. Dekhtyar', Doctor of Technical Sciences. There is a bibliography of Soviet and non-Soviet references at the end of each article.

TABLE OF CONTENTS:

DANILENKO, V.M.; RYABOSHAPKA, K.P.

X-ray scattering by plastically deformed substitution alloys containing dislocations without the Cottrell cloud. Sbor. nauch. rab. Inst. metallofiz. AN URSR no.10:46-55 '59. (MIRA 13:9)
(Dislocations in metals) (Alloys--Metallography)

DANILENKO, V.M.; RYABOSHAPKA, K.P.

Effect of the Cottrell cloud on X-ray scattering by plastically deformed alloys. Sbor. nauch. rab. Inst. metallofiz. AN URSR no.10:56-67 '59.
(MIRA 13:9)

(Dislocations in metals) (Alloys--Metallography)

24(7) SOV/48-23-5-21/31

AUTHORS: Geychenko, V. V., Danilenko, V. M., Krivoglaz, M. A., Matysina, Z. A., Smirnov, A. A.

TITLE: On the Theory of the Diffused Dispersion of an X-Ray and Slow Neutrons in Multicomponent Alloys (K teorii diffuznogo rasseyaniya rentgenovykh luchey i medlennykh neytronov mnogokomponentnymi splavami)

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1959, Vol 23, Nr 5, pp 637-639 (USSR)

ABSTRACT: The study of the diffused dispersion of various types of waves in the crystal lattice of alloys offers the possibility of investigating the arrangement of the various atoms in the crystal lattice and the influence exerted by microinhomogeneities upon alloy properties. A formula must be developed and expanded , permitting the computation of dispersion for the cases of X-rays and slow neutrons by the application of "factors of atomic dispersion". Such a formula (1) is written down in the form of a finite sum and the factors for the computation of the dispersion of an X-ray and of slow neutrons are described. This finite sum may be decomposed into two partial sums which consist of the diagonal or non-diagonal

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On the Theory of the Diffused Dispersion of an X-Ray and Slow Neutrons in Multicomponent Alloys

members, respectively. These two partial sums are then computed, namely, for the disordered state in the Brave type lattice. For an exemplification, these two formulas are written down for a binary alloy with the hexagon systems AB and AB_3. Finally, a wide space is devoted to the correlation parameters characterizing the state of the crystal. There are 4 references, 3 of which are Soviet.

ASSOCIATION: Institut metallofiziki Akademii nauk USSR
(Institute of Metal Physics of the Academy of Sciences, UkrSSR)

DANILENKO, V. [Danylenko, V.], kand.fiz.-mat.nauk

Is iron hard? Znan. ta pratsia no.8:9-10 Ag '60.
(MIRA 13:9)

(Iron)

DANILENKO, V.M.

Cottrell cloud in ordered alloys. Sbor. nauch. rab. Inst. metallofiz. AN URSR no.11:42-52 '60. (MIRA 13:11)
(Crystal lattices) (Phase rule and equilibrium)

30409
S/058/61/000/009/026/050
A001/A101

24 7200

AUTHORS: Danilenko, V.M., Kozyrskiy, O.Ya.

TITLE: On the problem of intensity of reflections on a roentgenogram

PERIODICAL: Referativnyy zhurnal. Fizika, no. 9, 1961, 189, abstract 9E48 ("Sb. nauchn. rabot In-ta metallofiz. AN UkrSSR, 1960, no. 11, 134-149)

TEXT: The authors consider the dependence of reflection width along and across the arc of Debye rings on the beam divergence, grain size and its mosaic structure. It is shown that the longitudinal width of reflection is considerably greater than the transverse one; it exceeds the greatest of the quantities corresponding to the action of each of the three factors of broadening. The longitudinal width of reflection changes at rotation of the crystal around the axis perpendicular to the plane of this reflection and simultaneous motion of the film along the rotation axis; this reflection width depends on the mean magnitude of orientation difference of the blocks and the ratio of velocities of crystal rotation to film motion. Using the known experimental data on reflection width along the arc of Debye ring for three different conditions of film

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S/058/61/000/009/026/050
A001/A101

On the problem of intensity of reflections ...

motion, it is possible to determine mean values of orientation difference of the blocks in two directions in the crystal and the position of these stresses relative to the crystal axes.

L. B.

[Abstracter's note: Complete translation]

DANILENKO, V.M.; KOZYRSKIY, G.Ya.

Method of determining the mosaic structure of deformed crystals.
Sbor. nauch. rab. Inst. metallofiz. AN URSR no.11:150-157 '60.
(MIRA 13:11)

(Crystals--Defects) (Metallography)

DANILENKO, V.M. [Danylenko, V.M.]; KRIVOGLAZ, M.O.[Kryvohlaz, M.O.]
LARIKOV, L.N.; SMIRNOV, A.A.

Ukrainian Republic Conference on the Theory of Metals and Alloys.
Ukr. fiz. zhur. 5 no.1:130-135 Ja-F '60. (MIRA 14:6)
(Metals—Congresses)
(Alloys—Congresses)

2557
S/185/60/005/002/006/022
D274/D304

24.7100 3309, 1144, 1395

AUTHORS: Danylenko, V.M. and Kozyrs'kyy, G.Ya.

TITLE: On the intensity of X-ray reflections

PERIODICAL: Ukrayins'kyy fizychnyy zhurnal, v. 5, no. 2, 1960, 190-201

TEXT: The intensity of X-ray scattering by a single crystal-grain is calculated. The width of the intensity distribution along and across the Debye ring is determined. The width is found to be dependent on the divergence of the X-ray beam, on the size of the grain and on the presence of misoriented beams of coherent scattering. The relationships given in the present article constitute a generalization of those given by V. Kononenko, P. Okrainets and G.Ya. Kozyrs'kyy (Ref. 4: UZhF, no. 3, 1958). For determining the width of the scattering, an ideal experiment is considered The intensity of the scattering is found

$$I(x', y') = I_1(x') I_2(y') \qquad (4)$$

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On the intensity of X-ray reflections

where

$$I_1(x') = \int_{-\infty}^{+\infty}\int dx''dx''' \psi\left(\frac{x''}{cb_\alpha}\right)\lambda\left(\frac{x''' - x''}{bb_\beta}\right)\varphi\left(\frac{x''' - x'}{ab_x}\right)$$

$$I_2(y') = \int_{-\infty}^{+\infty} dy'' \psi\left(\frac{y'' - y'}{Ahb'_\beta} - \frac{\sin\varphi}{h}\frac{y''}{Bb'_\beta}\right)\lambda\left(\frac{y''}{Bb_\beta}\right)\varphi\left(\frac{y'' - y'}{Ab_y}\right) \quad (5)$$

The functions ψ, λ, and φ correspond to the orientation of the beam, the size of the grain, and the influence of the focal point, respectively. x, y are the coordinates of the focal point, α, β - of the reflection center, A and B are constants, b_x, b_y, b_α, b_β, b'_α and b'_β correspond to the values of the integrated width of the respective functions (φ, λ, ψ). These functions have to be experimentally determined. It is concluded that if the beam is reflected from a fixed grain onto a fixed plate, the width along the Debye ring is determined by the joint influence of the three above-mentioned factors (in a particular case, the width can be the sum of the terms due to each of these factors). The width across

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On the intensity of X-ray reflections

the Debye ring depends mainly on the two factors which are responsible for the minor widths (as compared to the third). In particular, for large values of misoriented beams, the transverse width is determined by the divergence of the beam and the grain size, whereas the longitudinal width by the values of the misoriented beams. If the crystal rotates and the plate moves along the axis of rotation, the width varies as a function of the misorientation of beams and of the ratio of velocity of rotation of crystal to velocity of plate. From the observed values of width for three different velocities of plate, the form and orientation of the ellipsoid of reflection of a given crystal grain can be determined. There are 5 figures and 6 references: 5 Soviet-bloc and 1 non-Soviet-bloc. The reference to the English-language publication reads as follows: P.B. Hirsch, Kellar, Acta Cryst., 5, 162, 1952.

ASSOCIATION: Instytut metalofizyky AN USSR (Institute of Metalphysics, AS UkrSSR)

SUBMITTED: July 4, 1959

Card 3/3

25572
S/185/60/005/002/007/022
D274/D304

24 7300 3309, 1136, 1482

AUTHOR: Danylenko, V.M.

TITLE: On the theory of X-ray scattering by ordered alloys

PERIODICAL: Ukrayins'kyy fizychnyy zhurnal, v. 5, no. 2, 1960, 203-210

TEXT: The influence of domain structure on the intensity of X-ray scattering is considered. This influence was not taken into account by other authors; M.A. Krvvoglaz and A.A. Smirnov (Ref. 2: Teoriya upory adochivayushchikhsya splavov (Theory of Ordered Alloys), M. Fizmatgiz, 1958). Alloys with domain structure of type AB (AuCu, β-brass, and others) are considered. First, the scattering by antiphase domains with parallel boundaries is investigated. In this (one dimensional) case, the super-lattice reflections are broadened in a direction perpendicular to the boundary plane. The formula for the intensity is

$$1 - NN_1N_2\delta_1\delta_2 \left| \sum_{\nu=1}^{2} f_\nu e^{i(q,h_\nu)} \right|^2 \times$$

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$$\times \left\{ [1 + \cos(q,\delta)] \sum_{t=0}^{N-1} \cos(q,R)\, t + [1 - \cos(q,\delta)] \sum_{t=0}^{N-1} \cos(q,R)\, t(1 - 2\alpha)^t \right\} \qquad (15)$$

N is the number of unit cells, δ_1 and δ_2 are functions of q_1 and q_2 (which are distances), R is a translation vector. The first term in the braces represents intensity of lattice reflections and does not from the intensity of lattice reflections and does not differ from the intensity in crystals without domain structure. The second term corresponds to superlattice points of the reciprocal lattice. The superlattice reflections become wider in inverse proportion to the average number of units in the antiphase domain. In the three-dimensional case, (i.e. the antiphase domains are bounded in all three dimensions) another method is used for computing the intensity. (The three-dimensional case corresponds to actual crystals). In this case the broadening of the superlattice reflections takes place in all three directions in the reciprocal lattice, whereas

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On the theory of X-ray scattering...

the intensity of lattice reflections remains unchanged. The maximum of the intensity is at the superlattice point. The intensity decreases rapidly with distance from the superlattice point. There are 6 references: 3 Soviet-bloc and 3 non-Soviet-bloc. The references to the English-language publications read as follows: H. Jagodzinski, Acta Cryst., 2, 208, 1949; M.S. Patterson, J. Appl. Phys., 23, 805, 1952.

ASSOCIATION: Instytut metalofizyky AN USSR (Institut of Metalphysics, AS UkrSSR)

SUBMITTED: July 4, 1959

Card 3/3

DANILENKO, V.M.

S/185/60/005/004/005/021
D274/D306

AUTHOR: Danylenko, V.M.

TITLE: X-ray scattering by partly ordered alloys

PERIODICAL: Ukrayins'kyy fizychnyy zhurnal, v. 5, no. 4, 1960, 472-478

TEXT: The intensity of X-ray scattering, by partly-ordered solid solutions with domain structure is investigated. The intensity is given by

$$I = \sum_{\vec{\rho}} \exp\{i(q,\vec{\rho})\} \sum_{\nu}\sum_{\nu'} \exp\{i(q,h_\nu - h_{\nu'})\} \sum_{m} f_{m,\nu} f^{*}_{m,\nu'}, \quad (2)$$

where $f_{m,\nu}$ is the atomic factor of the ν-th atom in the m-th unit cell, q is the scattering vector, $\vec{\rho} = R_m - r_m$, (R_m being the radius-vector of the lattice point). Denoting by $P_{ss'}$, ($\vec{\rho}_{\nu\nu'}$) the probability that a given crystal has a pair of lattice points situated at the extremities of the vector $\vec{\rho}_{\nu\nu'}$ belonging to the domains s and s',

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by $\overline{f_{\nu,s}}$ the mean value of $f_{m,\nu}$ in an s-domain, and by $\varepsilon_{\nu\nu'}^{ss'}(\vec{\rho}_{\nu\nu'})$ the correlation coefficient, one obtains after some transformations

$$I = \sum_{\mu}^{N} \sum_{\vec{\rho}} \exp\{i(\mathbf{q}, \vec{\rho})\} \sum_{\nu} \sum_{\nu'} \exp\{i(\mathbf{q}, \mathbf{h}_{\nu} - \mathbf{h}_{\nu'})\} \times \tag{5}$$

$$\times \sum_{s} \sum_{s'} P_{ss'}(\vec{\rho}_{\nu\nu'}) \left\{ \bar{f}_{\nu,s} \bar{f}^{*}_{\nu',s'} - \frac{1}{2} \sum_{a} \sum_{a'} |f_{a} - f_{a'}|^{2} \varepsilon_{aa'}^{ss'}(\vec{\rho}_{\nu\nu'}) \right\}.$$

The terms in Eq. (5) which contain $\bar{f}_{\nu,s}$ correspond to the intensity of reflections, whereas the terms involving ε correspond to the diffusive background. The quantities $P_{ss'}$ depend on the number of types of domains, on their size and form. An expression for $P_{ss'}$ is found which is valid for an alloy with any number of components, types of lattice points and types of domains, viz.:

$$P_{ss'}(r_{\nu\nu'}) = \frac{1}{t^{2}} \left\{ 1 + (t\delta_{ss'} - 1)\left(1 - \frac{\alpha t}{t-1}\right)^{r_{\nu\nu'}} \right\}\left(1 - \frac{r_{\nu\nu'}}{\mathfrak{N}}\right). \tag{8}$$

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where t is the number of types of domains, r is the projection of ρ in a direction normal to the domain boundaries, δ is the Kronecker delta, $\mathfrak{N}$ is the total number of atom planes of the crystal, parallel to the domain boundaries, $\sim$ characterizes domain structure. On intensity of reflections, first the case is considered where the unit cell can be chosen so that all its lattice points should lie in an atom plane parallel to the domain boundaries. In this case the intensity of reflections is:

$$I_1 = \frac{N}{\mu t^2}\left\{\left|\sum_s F_s\right|^2 \delta(\mathbf{q} - 2\pi\tau) + \left[t\sum_s F_s^2 - \left|\sum_s F_s\right|^2\right]\cdot\right.$$
$$\left.\times \sum_p \exp\{i(\mathbf{q}, \rho)\}\left(1 - \frac{at}{t-1}\right)^2\left(1 - \frac{t}{\mathfrak{N}}\right)\right| \qquad (11)$$

where τ is the reciprocal-lattice vector and $\delta(q)$ the δ-function. The first term in the braces of (11) corresponds to structural re-

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flections, whereas the second corresponds to superstructural reflections. The intensity of structural reflections is not affected by the domain structure, whereas the superstructural reflections are, as a result of the domain structure, broadened in a direction normal to the atom plane of the reciprocal lattice which is parallel to the domain boundaries. Further, if not all the lattice points are in an atom plane which is parallel to the domain boundaries, then I_1 is given by

$$I_1 = \frac{N}{\mu l^2} \sum_{\rho} \exp\{i(\mathbf{q}, \rho)\} \sum_{s} \sum_{s'} \exp\{i(\mathbf{q}, \mathbf{h}_s - \mathbf{h}_{s'})\} \times \sum_{s} \sum_{s'} \left\{ 1 + (l\delta_{ss'} - 1)\left(1 - \frac{\alpha l}{l-1}\right)^{l+m_{ss'}} \right\} \left(1 - \frac{r_s}{\mathfrak{N}}\right) \bar{f}_s \bar{f}_{s'} \quad (16)$$

here, too, the intensity of structural reflections is not affected by the domain structure. The intensity of reflections from partly ordered alloys corresponds to the intensity of reflections from completely ordered alloys, whose atoms have mean effective values

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of the atomic factor at each sublattice of each domain. The broadening of the superstructural reflections depends on the mean size of the domain and on the number of domain-types. The intensity of the background is not affected by the domain structure in the absence of correlation between atoms of various kinds. With correlation, the intensity of the background is reduced. Domain structure reduces the correlation between atoms in proportion to the decrease in the ideal character of the crystal. There are 4 references: 3 Soviet-bloc and 1 non-Soviet-bloc.

ASSOCIATION: Instytut metalofizyky AN USSR (Institute of Metal-physics AS UkrSSR)

SUBMITTED: November 25, 1959

DANILENKO, V.M.

S/185/60/005/004/017/021
D274/D306

AUTHOR: Danylenko, V.M.

TITLE: On the theory of X-ray scattering by alloys with domain structure

PERIODICAL: Ukrayins'kyy fizychnyy zhurnal, v. 5, no. 4, 1960, 571-573

TEXT: An expression is found for the probability (stochastic) matrix which determines the intensity of X-ray scattering by alloys with domain structure. The probability $P_{ss'}(\rho)$ is found as in Ref. 1 (same author, same issue, pp 472-478). Let p_1 be the atomic concentration of ordered domains in the crystal, t - the number of types of domains, and α - a characteristic of domain structure. Then

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(1)

On the theory of X-ray scattering...

Here m is the projection of $\vec{\rho}$ on a direction normal to the domain boundaries. The first term in this formula does not depend on m (i.e. on $\vec{\rho}$). It corresponds to the intensity of structural reflections which does not change with domain structure. The second and third term decrease exponentially with increasing $\vec{\rho}$, hence they correspond to broadened reflections. The second term describes the intensity of superstructural reflections which are broadened in proportion to α/p_1, i.e. inversely proportional to the mean size of domains. Though this result seems trivial, yet if the entire volume of the crystal is ordered (Ref. 1: Op. cit), the broadening of the superstructural reflections depends not only on the mean size of the domains, but also on t. Here the reciprocal effect of neighboring domains influences the intensity of scattering. The last term in the formula corresponds to a broadened maximum of intensity; this maximum appears near the structural reflections if, on appearance of the domains, the concentration of the alloy varies. This maximum is entirely analogous to the "tails" of structural reflections which appear in X-ray scattering by non-periodically modulated structures.

Card 3/4

S/185/60/005/004/017/021
D274/D306

On the theory of X-ray scattering. .

There are 2 Soviet-bloc references.

ASSOCIATION Instytut metalofizyky A. USSR (Metalphysics Institute AS UkrSSR)

SUBMITTED November 25, 1959

Card 4/4

DANILENKO, V.M.

S/185/60/005/004/018/021
D274/D306

AUTHOR: Danylenko, V.M.

TITLE: On the theory of X-ray scattering by substitutional solutions

PERIODICAL: Ukrayins'kyy fizychnyy zhurnal, v. 5, no. 4, 1960, 573-574

TEXT: X-ray scattering by alloys with domain structure is considered, whereby the one-dimensional treatment of two earlier articles by the author (same periodical, pp 203-210, 571-573) is extended to three-dimensional treatment. As was shown earlier, the intensity of scattering is determined by the probability $P_{ss'}(\vec{\rho})$. This quantity can be readily found in two cases: 1) If the domain boundaries pass through the entire crystal, and 2) if the mean size of the domains is the same in all directions. In the first case it is enough to find

$$P(\vec{\rho}) = P_1(\vec{\rho}_1)\, P_2(\vec{\rho}_2)\, P_3(\vec{\rho}_3). \qquad (1)$$

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where $\vec{\rho}_i$ are the components of ρ in the directions normal to the plane of the domain boundaries, P_i is the probability that $\vec{\rho}_i$ lies within the boundaries of one domain. It is assumed that neighboring domains are similar. Then one obtains

$$P_{ss'}(\vec{r}) = \frac{1}{t^2}\{1 + (1\delta_{ss'} - 1)(1 - \alpha_1)^{m1}(1 - \alpha_2)^{m2}(1 - \alpha_3)^{m3} \quad . \quad (3)$$

The first term corresponds to structural reflections, and the second term - to superstructural reflections (as in Refs. 1 and 2). Neglecting terms of the order of α, the intensity of superstructural reflections will be proportional to

$$F(q) = \frac{1 - 1}{1 - \alpha_i} \quad (4)$$

where q_i are the projections of the scattering vector q on the ρ_i-axes. Thus in the three-dimensional case too, the superstructural

on the theory of X-ray scattering.

S/185/60/005/004/018/021
D274/D306

ASSOCIATION: Instytut metalofizyky AN USSR (Metalphysics Institute AS UkrSSR)

SUBMITTED November 25, 1959

Card 1/4

The Cottrell Atmosphere in Diluted Solid Solutions

character of the interatomic interaction in the alloy. In this paper, the author deals with the influence of the interatomic interaction in a diluted solid solution on the concentration of the Cottrell atmosphere. In the same way as in the earlier paper (Ref 3), it is assumed that the solid solution is a regular one and that the interaction of the admixture atoms with the dislocations can be expressed by means of simple formulae given by Cottrell (Ref 4). It is shown in the paper that, taking into consideration the interatomic interaction in the Cottrell atmosphere, the theory permits considering the phenomenon of formation of such an atmosphere at temperatures of the order of $kT \approx |v_{Dc}|$, when the simplified Cottrell theory is incorrect. At lower temperatures the properties of this atmosphere depend considerably on the mixing energy

$$w = \frac{V_{AA} + V_{BB}}{2} - V_{AB} .$$

Card 2/3

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S/126/60/009/06/002/025
E073/E335

AUTHOR: Danilenko, V.M.

TITLE: The Cottrell Atmosphere in Diluted Solid Solutions

PERIODICAL: Fizika metallov i metallovedeniye, 1960, Vol 9, Nr 6, pp 810 - 814 (USSR)

ABSTRACT: Although the conception of the Cottrell atmosphere is at present being used for explaining a number of phenomena in plastically deformed metals, the phenomenon of formation of the atmosphere is not adequately considered. Cottrell and Bilby (Ref 2) assumed that the main role in forming such an atmosphere is played by the elastic interaction between the dislocations and the admixture atoms. In earlier work (Ref 3) the author of this paper has shown that interatomic interaction in the alloy also plays an important rôle. In ordered alloys, atmosphere concentration is less than in disordered alloys, whereby the formation of the Cottrell atmosphere may be accompanied by local processes of disordering. Thus, although the atmosphere of the admixture atoms in the neighbourhood of dislocations is due to elastic distortions of the crystal lattice, its concentration may depend considerably on the

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reflections are broadened in a way analogous to the one-dimensional case. For case 2) one obtains

$$P(\vec{\rho}) = \exp(\beta\vec{\rho}), \qquad (5)$$

where $\beta = \ln(1 - 1/L)$; (L being the mean size). Thus one obtains

$$P_{ss}(\vec{\rho}) = \frac{1}{t^2}\left[1 + (t\delta_{ss'} - 1)\exp(\beta\rho)\right]. \qquad (6)$$

The first term of Eq. (6) is similar to the first term of Eq. (3), and the second term yields

$$F(q) = \frac{\beta}{(\beta^2 + q^2)^2} \qquad (7)$$

Hence the results obtained for the one-dimensional treatment can be extended to the three-dimensional case of X-ray scattering by ordered alloys with domain structure. There are 2 Soviet-bloc references

S/126/62/014/003/002/022
E032/E314

AUTHORS: Danilenko, V.M. and Smirnov, A.A.

TITLE: Order theory for ferromagnetic alloys. I

PERIODICAL: Fizika metallov i metallovedeniye, v. 14, no. 3, 1962, 337 - 347

TEXT: Since the degree of order in an alloy has a considerable effect on its magnetic properties, one theoretical approach has been to assume that the atoms are distributed in space with a certain order and determine the magnetic properties. However, the reverse process, i.e. the effect of the setting-up of spontaneous magnetization on the degree of order in the disposition of the atoms is also important. The aim of the present work was to obtain more detailed information on these two effects. The discussion is confined to binary alloys A-B with a body-centred cubic lattice of the β-brass type. It is assumed that each atom has a single "magnetic electron" and that the interactions responsible both for the ordering and magnetism may be localized to the first coordination sphere. Correlation in the disposition of atoms is not taken into account in the

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Order theory for ....

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E032/E314

determination of order and the angular distribution of spins is discussed on the assumption that all the "magnetic electrons" form a single magnetic lattice. In distinction to previous work in this field, use is made of the new method developed by the present authors and V.V. Geychenko (FMM, 1962, 13, 321), which allows a more general approach to the study of phase transitions associated with the appearance of order and magnetism. In this way, formulae are obtained for the temperature of phase transitions associated with the establishing of order and magnetization and the dependence of the temperature at which order is established on the magnetization and composition of the alloy. There are 3 figures.

ASSOCIATION: Institut metallofiziki AN UkrSSR (Institute of Metal Physics of the AS UkrSSR)

SUBMITTED: December 26, 1961

Card 2/2

DANILENKO, Vladimir Mikhaylovich; TITOVA, N.M., red.; DAKHNO, Yu.B., tekhn. red.

[What is a solid?] Chto takoe tverdoe telo? Kiev, Izd-vo AN USSR, 1963. 76 p. (MIRA 17:1)

DANILENKO, V.M.; SMIRNOV, A.A.

Theory of the ordering of ferromagnetic alloys. Sbor. nauch. rab. Inst. metallofiz. AN URSR no.17:3-24 '63. (MIRA 17:3)

S/126/63/015/002/006/033
E039/E420

AUTHORS: Danilenko, V.M., Rizdvyanetskiy, D.R., Smirnov, A.A.

TITLE: The ordering of ferromagnetic alloys with a face-centered cubic lattice

PERIODICAL: Fizika metallov i metallovedeniye, v.15, no.2, 1963, 194-202

TEXT: The question of the effect of ordering and magnetization in the case of ferromagnetic alloys with a volume centered cubic lattice was studied previously. In this paper an analogous theory of ordering in ferromagnetic binary alloys A-B with a facecentered cubic lattice is developed. It is assumed that the structure of the alloy does not change with temperature and the possibility of disintegration is not taken into account. In addition for each atom of the alloy there must be one 'magnetic' electron responsible for the magnetic properties of the alloy. Correlation between atoms and also the spin of the 'magnetic' electrons is neglected. The free energy of all systems is expressed as the sum of two terms; the free energy of the configuration F_1 (without exchange interactions) and the free energy of the 'magnetic' electrons F_2

Card 1/2 $F = F_1 + F_2$

The equilibrium equations of the system are investigated by the use of differential geometry and expressions are derived for the temperatures of magnetization and ordering as a function of composition. The form of the results is largely governed by the value of a term α which defines the interaction processes in ordering and magnetization

$$\alpha = 2A_{AB} - A_{AA} - A_{BB}$$

where A_{AA}, A_{BB} and A_{AB} are exchange distances between neighboring atoms A-A, B-B and A-B. When $\alpha > 0$ magnetization increases the temperature for the order-disorder transition and ordering increases the Curie temperature. The converse is true when $\alpha < 0$. Curves showing the concentration dependence of the Curie point in the ordered state at $\alpha = 0$ are represented by straight lines but when $\alpha \neq 0$ they deviate from the linear relationship. There are 3 figures.

ASSOCIATION: Institut metallofiziki AN USSR (Institute of Physics of Metals AS UkrSSR)

SUBMITTED: July 21, 1962

L 15560-63 EWT(1)/EWP(q)/EWT(m)/BDS/ES(s)-2 AFFTC/ASD/ESD
Pt-4 JD

ACCESSION NR: AP3004584 S/0126/63/016/001/0003/0012

AUTHORS: Danilenko, V. M.; Rizdvyanetskiy, D. R.; Smirnov, A. A.

TITLE: Ordering of ferromagnetic and antiferromagnetic alloys

SOURCE: Fizika metallov i metallovedeniye, v. 16, no. 1, 1963, 3-12

TOPIC TAGS: alloy, ferromagnetic, antiferromagnetic, ordering

ABSTRACT: This is a discussion concerning the development of a statistical theory of atom ordering and magnetization. The theory encompasses both ferromagnetic and antiferromagnetic alloys with cubic space lattice of the type β-brass. Simultaneous consideration of these two alloy types is believed to be important because of the possible existence of ferro- and antiferromagnetic orders of spins in alloys with different metal concentrations. The calculations were limited to binary alloys A-B. It was assumed that each atom of the crystal has one "magnetic" electron. The distribution and correlation of atoms and spins of "magnetic" electrons were disregarded, and the calculations were limited to the interaction of the nearest atoms. The relation between the ordering and magnetization processes was studied, the temperatures of phase transformation

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processes were determined, and the following relations have been established: 1) the relation of ordering temperature to alloy composition and to the degree of spontaneous magnetization; and 2) the relation of Curie temperature to the composition and to the degree of ordering of atoms. Orig. art. has: 39 formulas and 2 figures.

ASSOCIATION: Institut metallofiziki AN UkrSSR (Institute of Physical Metallurgy, Academy of Sciences, Ukrainian SSR)

SUBMITTED: 01Feb62 DATE ACQ: 27Aug63 ENCL: 00

SUB CODE: ML NO REF SOV: 007 OTHER: 003

Card 2/2

ACC NR: AT6022347 SOURCE CODE: UR/0000/66/000/000/0069/0076

AUTHOR: Danilenko, V. M.

ORG: None

TITLE: Investigation of the effect of synchronization instability on the antinoise properties of a method for PCM signal reception based on wide-band filtration with integration after the detector

SOURCE: Vsesoyuznaya nauchnaya sessiya, posvyashchennaya Dnyu radio. 22d, 1966. Sektsiya teorii i tekhniki peredachi diskretnykh signalov. Doklady. Moscow, 1966, 69-76

TOPIC TAGS: signal noise separation, pulse code modulation, signal reception, synchronous communication, data transmission, wideband transmission, signal to noise ratio

ABSTRACT: The author considers a PCM reception method in which integration takes place after the detector. Beginning of integration is determined in this case by the arrival time of the sync pulse generated by the synchronization system. Instability causes fluctuation in the time for beginning of integration with respect to the moment of arrival of the code pulse. The consequent reduction in the antinoise properties of PCM signal reception is analyzed for the case of signal transmission with constant average power where elementary signals of a given duration correspond to the symbols "1" and "0" at the reception point. Noise is separated from the PCM signal by wide-

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ACC NR: AT6022347

band filters, the output voltages from the filters are detected and subtracted and their difference is integrated in the given duration time for the elementary signals. After integration, a "1" or "0" is fed to the decoder depending on the sign of the voltage and the integrator voltage is then reset to zero. An approximate formula is derived for the probability of error with noise in the communications channel and synchronization instability and the antinoise characteristics for the given reception method are graphed for the case of ideal synchronization and for specific values of synchronization instability. These graphs show that within given limits the reduction in antinoise properties due to synchronization instability may be compensated by increasing the signal-to-noise ratio at the detector input. When this ratio is increased further, the antinoise curves for constant synchronization instability asymptotically approach the theoretical limiting value. Orig. art. has: 4 figures, 24 formulas.

SUB CODE: 09/17/ SUBM DATE: 09Apr66/ ORIG REF: 004

Card 2/2

BRILING, R.S.; MIRONOVA, N.S.; DANILENKO, Ya.M., otv.red.; VAYNBERG, D.A., red.; TROFIMENKO, A.S., tekhn.red.

[Methods manual for mechanical drawing; instructions and tests for students of correspondence institutions of higher learning specializing in construction engineering] Metodicheskoe posobie po inzhenerno-stroitel'nomu chercheniiu; ukazaniia i kontrol'nye raboty dlia studentov zaochnykh vysshikh tekhnicheskikh uchebnykh zavedenii stroitel'noi spetsial'nosti. Khar'kov, Izd-vo Kharkovskogo gos.univ. im. A.M.Gor'kogo, 1959. 195 p. (MIRA 12:7)

(Mechanical drawing--Instruction)

GONCHARENKO, A.K., inzh.; DANILENKO, Ye.K., inzh.

Seminar on the exchange of practices in designing irrigation and drainage pumping stations. Gidr. i mel. 15 no.4:63-64 Ap '63. (MIRA 16:5)

(Pumping stations)

T

Country : USSR
Category: Human and Animal Physiology Circulation
Blood Vessels

Abs Jour: RZhBiol , No 19, 1958, 88879

Author : Danilenko, Ye T.
Inst : Vinnitsa Medical Institute
Title : Conditioned Vascular Reflexes in Schizophrenia.

Orig Pub: Sb. nauchn. tr. Vinnitsk. med. in-ta., 1957, 10, 34-46

Abstract: No abstract.

Card : 1/1

T-47

DANILENKO, Ye. T., Cand Med Sci -- (diss) "Effect of insulin therapy on cortical dynamics in patients with schizophrenia." Odessa, 1958. 14 pp (Vinnitsa State Med Inst), 200 copies (KL, 15-58, 118)